DR. CHARLES E. WILDE, JR.
(1918–1994)

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IN MEMORIAM

Dr. Charles E. Wilde, Jr. (1918–1994)

Dr. Charles E. Wilde, Jr., Emeritus Professor of Zoology at the University of Rhode Island, died on February 7, 1994. He will be remembered by his students and colleagues as a fine scientist, inspiring mentor, true gentleman, and good friend.

Dr. Wilde was born on November 5, 1918, in Boston, and earned the A.B. degree from Dartmouth College in 1940. From 1942 to 1944, during the Second World War, he served in North Africa as a medical intelligence and control officer in the United States Army. Upon returning home, he pursued graduate study with Professor Elmer G. Butler at Princeton University, where he was awarded the Ph.D. degree in 1949. He married Elizabeth Gibbs in January of 1944. The Wildes had three children, Deborah N. Wilde, Charles E. Wilde, III, and Dixon W. Wilde, all of whom have pursued very successful professional careers.

In 1949, Dr. Wilde accepted an appointment at the University of Pennsylvania as Assistant Professor of Pathology in the School of Dental Medicine. He was promoted through the ranks to Professor and Chairman in the Department of Histology and Embryology in 1956 and held those positions until 1975. At the same time, he held appointments as Professor of Embryology in the Department of Biology and Professor of Histology and Embryology in the Division of Graduate Medicine, School of Medicine. He then moved to the University of Rhode Island, where he was Professor and Chairman in the Department of Zoology until his retirement in 1986, when he was named Professor Emeritus.

Dr. Wilde was a highly recognized figure in the scientific world. He was an invited speaker at numerous national and international symposia and belonged to several prominent scientific organizations, of which the most important to him were the Society for Developmental Biology, the American Society for Cell Biology, and Sigma Xi. He was a John Simon Guggenheim Memorial Foundation Fellow in 1957–1958 and spent that year working with Dame Honor Fell at the Strangeways Laboratory in England, an experience which he treasured throughout his career. In recognition of his achievements, he received an honorary Master of Science degree from the University of Pennsylvania in 1971.

Dr. Wilde was highly active in the Mount Desert Island Biological Laboratory, where he held posts as a Trustee (1951–1980), Secretary of the Corporation (1951–1952, 1959–1963), Director (1967–1970), and Vice-President (1973–1978). He was President of the Laboratory from 1978 to 1979. Much of his beautiful research on fish embryos was conducted at the Mount Desert Laboratory. Outside his scientific teaching and administrative work, Dr. Wilde was an avid skier throughout his life.

Chuck Wilde's research interests were wide and varied. He was an early pioneer in the development and use of *in vitro* tissue and organ culture techniques for studying organogenesis in amphibian embryos. Using these techniques, he was able to obtain complete development of urodele limb buds *in vitro* and to show that limb bud development required the stimulation of posterior peribrachial flank tissue and was inhibited by gill tissue. This work, published as three papers from his Ph.D. thesis, has continuing significance today in the analysis of how the prospective limb regions of the flank acquire limb character and how axial patterns of growth and differentiation are established as the limb bud grows out.

Wilde is probably best known, however, for his studies on the differentiation of neural crest cells during urodele embryogenesis and for his analyses of the role of aerobic metabolic pathways and RNA synthesis in the early development of urodele and teleost embryos. In a series of three beautiful papers in 1955 and 1956, he showed that the differentiation of urodele cranial neural crest cells into ectomesenchyme and pigment cells requires the metabolism of phenylalanine, provided by cells of the archenteron roof. Later, in a decade-long series of papers with Dr. Richard Crawford, he turned his attention to studies of the effects of inhibiting aerobic metabolism on morphogenesis and differentiation in urodele and teleost embryos. This work was conducted simultaneously with studies on the temporal relationship between RNA synthesis and morphogenetic and differentiative events. Wilde and Crawford showed that urodele and teleost embryos are dependent on aerobic metabolic pathways for early developmental events, and they were among the first to show that the morphogenetic effects of inhibiting RNA synthesis at an early stage of development were not manifested until later stages, thus suggesting

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that RNA translated during a given developmental stage is transcribed at an earlier stage. Much of this work was an early harbinger of current studies on the molecular basis of development. Simultaneously, Dr. Wilde was publishing the results of experiments on the role of the extracellular matrix and what are now known as autocrine factors on the differentiation of amphibian cells *in vitro*.

Wilde's graduate students also engaged in a diverse array of research projects, reflecting the catholic tastes of their mentor. These included avian skeletal and cardiac muscle differentiation, the ultrastructure of odontoblasts and extracellular matrix in the developing teeth of caimans and humans, the ultrastructure of adherens junctions in reaggregating chick embryo cells, the ultrastructure of oocytes and the hormonal control of oogenesis in *Xenopus laevis*, regeneration of urodele limbs and jaws, the role of steroid hormones in transcription during chick embryo retina development, protein synthesis in normal and polar lobeless *Ilyanassa* embryos, eye development and regeneration in *Ilyanassa*, and primary axis formation in the early chick blastoderm. All of these research endeavors were supported by numerous grants from the National Science Foundation, National Institute for Dental Research of the National Institutes of Health, the National Cancer Institute, and the Muscular Dystrophy Association. He encouraged similar diversity in the work of his colleagues, including research on odontogenesis by Dr. Richard Herold and on neural development by Dr. Ronald Piddington.

In training graduate students, Chuck Wilde had a unique, but effective, approach. He was not a micromanager, and he was not interested in running a research factory. Instead, he encouraged his students to autonomously develop their research abilities and technical skills so that they could be independent scientists. This meant hard work and sometimes running up blind alleys, which is the reality of doing science, but he was always there when you needed him with good suggestions and sound advice. The atmosphere in his laboratory was lively, invigorating, and full of good humor. It was a place to grow intellectually.

Dr. Wilde was respected by all for his high intellect and ability as a scientist. These traits were combined with the highest of personal qualities and integrity. One of his most admirable characteristics, that perhaps says the most about Chuck Wilde as a person, is that in the course of his successful career, he put his family first, above all else. He truly enriched the lives of all of us who knew him, and we will miss him.

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Graduate Students of C. E. Wilde, Jr.
Caroline H. Damsky (M.S., 1966)
Herbert K. Gordon (Ph.D., 1967)
Harold Kaye (Ph.D., 1967)
David E. Maslow (Ph.D., 1968)
David L. Stocum (Ph.D., 1968)
Kathleen Horton (Ph.D., 1969)
Ellen L. Taylor (Ph.D., 1969)
Gladys Teitelman (Ph.D., 1971)
Robert A. B. Schwartz (Ph.D., 1972)
Heber T. Graver (Ph.D., 1972)
Edward Macarak (Ph.D., 1973)
Joel Piperberg (Ph.D., 1977)
Barbara L. Gibson (Ph.D., 1982)
Lois Patterson (Ph.D., 1983)